Department of Energy
Washington, DC 20585

QA: QA

JUL 25 2006

Ted C. Feigenbaum
President and General Manager
Bechtel SAIC Company, LLC
1180 Town Center Drive, M/S 423
Las Vegas, NV 89144

REPORT FOR AUDIT OQA-BSC-06-12 OF YUCCA MOUNTAIN SITE ACTIVITIES PERFORMED BY BECHTEL SAIC COMPANY, LLC, (BSC), U.S. GEOLOGICAL SURVEY, AND NATIONAL LABORATORIES AT THE YUCCA MOUNTAIN SITE, NEVADA

The purpose of this letter is to transmit the report of an audit conducted by a team of auditors representing the Office of Civilian Radioactive Waste Management. The audit was performed from June 14 to 22, 2006, at the Yucca Mountain Site. The team assessed BSC's implementation of quality assurance requirements for processes as described in the latest revision of DOE/RW-0333P, Revision 17, *Quality Assurance Requirements and Description*, (QARD) and DOE/RW-0565, Revision 0, *Augmented Quality Assurance Program* (AQAP).

The audit team documented six conditions adverse to quality and one recommendation that were submitted into the Corrective Action Program (CAP). The condition reports (CR) were subsequently classified by the CAP screening process as six Level C and one Level D. The details of the CRs are identified in the enclosed report.

Except for the six CRs noted above, the audit team concluded that BSC's implementation of QARD and AQAP activities at the Yucca Mountain Site were both adequate and effective.

The identified conditions will be followed to closure within the CAP. The audit is complete and closed and no response to this letter is necessary.

If you have any questions, please contact me at (702) 821-8409 or William J. Glasser at (702) 821-8425.

Kerry M. Grooms
Team Lead, Quality Assessments
Office of Quality Assurance

OQA:KMG-1273

Enclosure:
Audit Report OQA-BSC-06-12

LLM5807
WM-11

cc w/encl:
E. F. Sproat, III, DOE (RW-1) FORS
W. J. Arthur, III, DOE (RW-8) NV
J. R. Dyer, DOE (RW-4) NV
P. M. Golan, DOE (RW-1) FORS
M. L. Ulshafer, DOE (RW-3) NV
S. A. Wade, DOE (RW-7) NV
W. R. Smith, NRC, Washington, DC
R. M. Latta, NRC, Las Vegas, NV
J. D. Parrott, NRC, Las Vegas, NV
H. M. Carmichael, BSC, Las Vegas, NV
M. D. Kennedy, BSC, Mercury, NV, M/S 763
W. J. Glasser, NQS, Las Vegas, NV
K. J. Skipper, USGS, Las Vegas, NV

QA: QA

U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
OFFICE OF QUALITY ASSURANCE

REPORT FOR AUDIT OQA-BSC-06-12 OF YUCCA MOUNTAIN SITE ACTIVITIES PERFORMED BY BECHTEL SAIC COMPANY, LLC, U.S. GEOLOGICAL SURVEY AND NATIONAL LABORATORIES AT THE YUCCA MOUNTAIN SITE, NEVADA

JUNE 14 - 22, 2006

Prepared by: William J. Glasser — **Date:** 7-18-06
William J. Glasser
Audit Team Leader

Approved by: _____ — **Date:** 7/20/06
Kerry M. Grooms
Team Lead, Quality Assessments
Office of Quality Assurance

EXECUTIVE SUMMARY

Representatives of the Office of Civilian Radioactive Waste Management (OCRWM) conducted an audit of Yucca Mountain Site activities performed by Bechtel SAIC Company, LLC (BSC), the National Laboratories, and U.S. Geological Survey (USGS) from June 14 to 22, 2006. The audit team evaluated the adequacy of procedure implementation and the overall effectiveness of the procedures and activities that implement DOE/RW-0333P, Revision 17, *Quality Assurance Requirements and Description* (QARD), and DOE/RW-0565, Revision 0, *Augmented Quality Assurance Program* (AQAP). The team also evaluated effectiveness of completed corrective actions from condition reports (CR) identified during the previous site audit OCRWMC-OQA-05-14.

The audit team documented six conditions adverse to quality (CAQ) and one recommendation that were submitted into the Corrective Action Program (CAP). The CRs were subsequently classified by the CAP screening process as six Level C and one Level D. The CRs are identified and titles are listed as follows:

Level C CR 8632 - No receipt inspection verification plan
Level C CR 8633 - Water meter, one year flow check cycle not performed
Level C CR 8634 - No ES&H organizational file plan
Level C CR 8635 - Grading sheet references not maintained current
Level C CR 8636 - Failure to control nonconforming items
Level C CR 8637 - Failure to maintain list of Tracers, Fluids, and Materials
Level D CR 8638 - No formality to verify safety mitigations

Specific details regarding each of the above issues are discussed in Sections 1.0 and 2.0 of this report.

In addition to the implementation of the QARD and AQAP requirements, the audit team reviewed BSC's evaluation of rail, electrical, and fire protection systems with respect to their knowledge of current system status and management of safety-related issues. The team found that BSC has extensive knowledge of existing conditions and is implementing safety mitigations that they have deemed appropriate.

Except for the CRs identified above, the audit team concluded that BSC's implementation of QARD and AQAP activities at the Site were both adequate and effective.

1.0 AUDIT DETAILS

Attachment A lists the personnel contacted during the audit including meeting attendees. Attachment B is a summary of the audit results.

Audit Team and Observers

William J. Glasser	Audit Team Leader
James E. Flaherty	Auditor

Donald J. Harris	Auditor
Robert A. Toro	Auditor
James V. Voigt	Auditor
Mary E. Bennington	Office of Quality Assurance Observer

BSC's implementation of QARD and AQAP activities are accomplished through the use of Administrative Procedures (AP), Line Procedures (LP), and BSC specific PRO procedures supplemented by desktop instructions. BSC has implemented a grading process for AQAP-related work that specifies the specific procedures to be used for a given activity that are generally the same processes used for implementation of QARD work.

1.1 Organization

The audit team reviewed the Exploratory Studies Facility (ESF) Site Manager Chart dated December 12, 2005, and found it satisfactory. Functional organizations are defined and are consistent with an adequate quality assurance (QA) program. Although shown on the organization chart with a dotted line, the site quality organization reports to the BSC QA Manager and is independent of the line management.

1.2 Quality Assurance Program

The audit team evaluated implementation of QA-PRO-1041, Revision 0, *Quality Assurance Surveillance.* Surveillance schedules are prepared and maintained on a periodic bases and include surveillance of site-related activities. The team found that the surveillance program is adequately implemented.

The audit team verified implementation of LP-2.9Q, Revision 2, ICN 0, *Establishment and Verification of Required Education and Experience of Personnel*, as it relates to personnel assigned to support site activities. The team verified three employees and found the required documentation to be satisfactory. In addition, the team reviewed three training program descriptions and found them to be satisfactory.

OP-PRO-9101, Revision 0, *Work Control Process*, was reviewed, along with a sampling of approved work orders, work in progress, and closed packages. The preparation and use of work requests and work orders in accordance with OP-PRO-9101 was found to be acceptable.

The audit team reviewed procedure PA-PRO-0204, Revision 0, *Borehole Security*, interviewed the Deputy Manager for Borehole Security, and examined related documentation. All requirements were satisfactorily addressed and the team determined that the Yucca Mountain Project (YMP) Site's program for Borehole Security is effectively implemented.

The audit team evaluated implementation of LP-OM-050Q-BSC Rev.1 ICN 0, *Visual Observation of Drainage Ditches and Graded Roads and Pads.* The team reviewed seven individual records that represent activity in this area and found that the inspection requirements are being satisfactorily implemented and submitted as QA records.

The audit team evaluated implementation of LP-OM-072-BSC, Revision 2, ICN 0, *Design and Configuration Control of ESF Structures, Systems and Components*, with respect to the grading of Safety Systems and Components (SSC) and non-SSC items to support AQAP activities. The team determined that BSC has developed 12 ESF System (SSCs or non-SSCs) QA Grading Worksheets that define the applicability of the QA program to the specific components. Each of these grading sheets was submitted to Site Document Control and the Records Processing Center (RPC). The audit team noted that the ESF grading worksheets are not uniquely identified with a document number or under Configuration Management; consequently, when a procedure is canceled and new procedure issued, a Document Action Request is not issued against the appropriate ESF Grading Worksheet. There are no provisions in the procedure to update the ESF Grading Worksheets for procedures changes. The procedure does contain provisions to change the ESF Grading Worksheets only if the classification of the ESF system is changed. Since the work control requires the inclusion of copies of the appropriate graded documents in the work order, maintenance of the ESF Grading Worksheet would be appropriate. The audit team noted that a minimum of eight procedures in the ESF Grading Worksheets have been superseded and are no longer valid. This condition was documented on Level C CR 8635. Except for the issue noted, management of the AQAP activities through the grading process is satisfactory.

1.3 Implementing Documents

PA-PRO-0308, Revision 0, *Procedure Testing Work Implementation and Control*, was reviewed, along with a sample of five Field Work Packages (FWP). The audit team confirmed that the FWPs had been properly developed and that each applicable organization or affected technical discipline had performed a review of the document. The team examined the use of Test Work Authorizations (TWA) versus a FWP and confirmed that the procedural criteria for assigning a TWA was adequate. All TWPs and TWAs examined were readily available in the Records Information System. In addition all TWAs examined adequately initiated the Test Work Authorization and Control requirements. The preparation and use of TWPs and TWAs in accordance with PA-PRO-0308 was found to be acceptable.

The audit team evaluated LP-OM-041Q-BSC, Revision 0, ICN 5, *Water Use and Control – Subsurface.* The team examined water-meter usage documentation and the subsequent submittal of requisite records to the RPC. The audit team found that the preparation, use and preservation of the water-meter usage documentation in accordance with LP-OM-041Q-BSC was acceptable.

1.4 Document Control

Implementation of LP-6.3Q-BSC, Revision 0, ICN 1, *Document Control*, was reviewed along with a sample of documents to be processed. In accordance with the line procedure, documents are processed and distributed appropriately and in a timely manner. Stamped and uniquely identified working copies were used for work orders; new revisions being issued only when all obsolete issues had been retrieved.

1.5 Control of Purchased Items and Services

The audit team evaluated the receiving and control of items at the site as required by QA-PRO-1071, Revision 1, *Acceptance of Items and Services*. The team evaluated 6 receiving reports, suspect counterfeit item inspection reports, 18 acceptance reports for calibration services including the certification of calibration for the measuring and test equipment (M&TE) and found the documentation to be satisfactory except for the receipt of one item. The procedure applies to BSC procured items and services that are subject to the requirements of the QARD and AQAP and requires the QA representatives to develop a verification plan and perform receipt inspection. The team found that the procurement of Inorganic Standards (24 each) from Environmental Resources Associates did not have a verification plan developed or receiving inspection performed for those standards received at the site. The team noted that QA-PRO-1071 does not specify what requires receiving inspection or what is exempt from receiving inspection. This issue was documented on Level C CR 8632.

1.6 Identification and Control of Items

The audit team evaluated implementation of PA-PRO-0203, Revision 0, *Tracers, Fluids, and Materials Data Reporting and Management.* The team determined that the database and format specified by this procedure are being used to document activities. However, the site is using LP-OM-040Q-BSC, Revision 0, ICN 3, *Tracers, Fluids, and Materials Estimating, Accounting, and Reporting*, to actually meet the requirements. The audit team noted that the requirements of the LP to prepare a list of TFMs and provide for the Portal Control use are not being implemented. This condition was documented on Level C CR 8637.

1.7 Control of Special Processes

The audit team evaluated the qualification of BSC personnel in accordance with QA-PRO-1076, Revision 0, *Qualification and Certification of Nondestructive Examination Personnel.* The team reviewed the qualification of the BSC Level III individual who is qualified for ultrasonic, liquid penetrant, magnetic particle, and radiographic inspections based on certifications from SNT-TC-1A issued certifications and found the certification appropriate. The qualification record for the only other qualified individual (magnetic particle only) was also reviewed and found acceptable.

1.8 Inspection

QA-PRO-1073, Revision 1, *General Quality Control Inspection and Testing*, was reviewed and impact reviews were examined for six documents. Impact reviews were complete and in accordance with the implementing procedure.

QA-PRO-1074, Revision 0, *Development, Approval, and Control of Inspection and Test Checklists*, was reviewed along with the inspection checklists for four documents. All inspection checklists were complete and approved by the appropriate supervision.

The audit team evaluated the qualification of inspection personnel to QA-PRO-1075, Revision 2, *General Inspection and Test Personnel Certification for QA/QC.* The qualification records for three of BSC's personnel certified to perform civil/structural, electrical, piping/mechanical, and welding inspections were reviewed and found to meet the certification requirements of the procedure.

1.9 Control of Measuring and Test Equipment

The audit team evaluated LP-12.1Q-BSC, Revision 0, ICN 1, *Control of Measuring and Test Equipment,* by review of the M&TE master list and verification of M&TE stored at the test site. Control of M&TE was found satisfactory.

The audit team evaluated implementation of LP-OM-039Q-BSC, Revision 0, ICN 1, *Water Meter Flow Check.* The team reviewed the water-tank capacity verification record dated May 8. 2006, and the flow-check records for six water-flow meters and found them satisfactory. However, according to LP-OM-041-BSC, the water meters are retrieved from service prior to one-year flow check dates as indicated on the calibration sticker and from the meter database maintained in the Flow Check Office. The team noted that water meters are not always checked on the annual anniversary for accuracy upon return to the Flow Check Office but are checked prior to the next time the meter will be placed into service. This time frame may be several months to years later. This condition was documented on Level C CR 8633.

1.10 Handling, Storage and Shipping

The audit team evaluated implementation of LP-CON-006-BSC, Revision 4, ICN 4, *Receipt, Identification, and Handling of Materials.* The audit team verified Department of Transportation Hazmat Transportation Training for warehouse personnel has been conducted. The team witnessed the receipt and processing of PO NN-FPA-03817 and preparation of the material receiving report. The team reviewed the shelf-life register, which contained 16 items and verified that the warehouse personnel are aware of the expiration dates and dedicated storage area for shelf-life materials.

1.11 Inspection, Test and Operating Status

The audit team evaluated implementation of LP-CON-007-BSC, Revision 1, ICN 5, *Storage of Materials.* The team observed that compressed gasses are stored on metal platforms, off the ground and covered. Each cylinder was capped and tagged to identify the contents. Full cylinders and empty cylinders are segregated on the platforms and retained in place with chains. Currently no Q materials are stored in the warehouse; however, there are provisions to segregate Q material when received.

1.12 Nonconformances and Corrective Action

The audit evaluated the management of nonconformances with respect to the identification, tagging, and segregation of nonconforming items as required by AP-16.1Q, Revision 8, ICN 6,

Condition Reporting and Resolution. The team reviewed the hold tag log and verified the placement of the tags and control of the items for ten conditions. Except for the two items listed below, all of the selected items on the site were found to be properly tagged and controlled.

The audit team identified two items that were supposed to be on hold in the receiving area for suspect/counterfeit fasteners. However, the items were shipped back to the supplier before the applicable CRs 8171 and 8279 were dispositioned and the actions accepted. The log maintained to account for hold tagged items still listed the items on hold in the warehouse. This condition was documented on Level C CR 8636.

Except for the two items in receipt inspection that were not managed properly, implementation of nonconformance control at the site was satisfactory.

1.13 Quality Assurance Records

The audit team evaluated the implementation of AP-17.1Q, Revision 4, ICN 2, *Records Management,* at the YMP Site. The audit team evaluated records file plan, records storage, and examples of records packages and transmittals at the YMP Site. The team found that no required Organizational File Plan for the ES&H Site organization has been developed for 2006. Per discussion with this organization's Records Coordinator, a file plan is being developed pending resolution of issues resulting from a review of this organization's 2005 Organizational File Plan. This issue was documented on Level C CR 8634.

With the exception of the CR noted in this section, the audit team determined that the procedural implementation of the records management process was satisfactory.

1.14 Supplement II - Sample Control

Two procedures, PA-PRO-0809, Revision 0, *Removal, Shipment, and Return of Specimens Curated by the Sample Management Facility*, and AP-SII-1.Q, Rev. 001, *Authorization for Sample Examination at the Yucca Mountain Project Sample Management Facility*, were reviewed, the Sample Management Facility Manager interviewed, and documentation examined to determine compliance to procedural requirements. The audit team found that the YMP program for sample control is effectively implemented.

1.15 Supplement III - Scientific Investigation

The audit team evaluated the implementation of two procedures that are used in scientific investigations, EV-PRO-5004, Revision 0, *Meteorological Data Processing*, and PA-PRO-0308, Revision 0, *Testing Work Implementation and Control.* The team determined that the YMP program for scientific investigation is effective.

1.16 Supplement IV - Field Surveying

The audit team interviewed the lead surveyor and reviewed two surveying procedures, LP-OM-037Q-BSC, Revision 0, ICN 3, *Control of Survey Equipment*, and LP-PRO-038Q-BSC, Revision 0, ICN 1, *Surveying*. The team also examined survey-related documentation. The team determined that the YMP program for field surveying is being effectively implemented.

1.17 Supplement V - Control of Electronic Management of Data

Compliance to the requirements of this QARD supplement was determined through examination of the FWP. The packages requiring electronic management of data specified appropriate control requirements. The audit team determined that QARD Supplement V requirements are effectively implemented by the YMP program for this area.

2.0 SYSTEM REVIEWS

In addition to the implementation of QARD and AQAP requirements, the audit team evaluated BSC's evaluation of rail, electrical, and fire protection systems with respect to their knowledge of current system status and management of safety issues. The team found that BSC has extensive knowledge of existing conditions and is implementing safety mitigations that they have deemed to be appropriate.

Management has also provided guidance and direction for the identification and tracking of safety mitigations implemented at the YMP. Desktop information document OP-DSK-9103, Revision 0, *ESF Safety Mitigations*, is used in identifying and tracking compensatory actions implemented by site personnel as a result of inadequate design, nonconforming condition, or degraded equipment. The Operator in Charge ensures that all items requiring a mitigation strategy to be developed are entered into the CAP. This action is to ensure that an evaluation is completed and documented for each issue and a plan is developed to eliminate the need for mitigation.

A chronology of events detailing key systems activities and accompanying self-assessments/ audits is shown in Attachment C of this report.

Results of the team's evaluation during its observation and discussion with Site personnel are provided for the following systems:

2.1 Rail System

The original 36-inch narrow gauge track was installed in the ESF main tunnel beginning in 1994 using alternate construction techniques as approved by the Department of Energy. The rail was manufactured in 1906, prior to controlled cooling manufacturing techniques. The original design for the ESF rail installation is delineated in OCRWM Program Document DC#37662, *Rail and*

Track Installation. The rail system was used first in support of tunneling activities until excavation was complete and then in support of ESF operations. Review of the rail system per discussion with Operations and the Field Engineer indicated the following:

- The design basis is being reconstituted.
- Existing conditions have been evaluated resulting from independent analyses and self-assessments on the rail system.
- The CAP is used to track and resolve issues, findings, concerns, and observations from these independent analyses and self-assessments conducted on the rail program.
- Safety mitigations are managed by Operations. A database provides a total count of findings, issues, and concerns for the ESF systems (ventilation, rail, electrical, water, lighting, communication, fire protection, and ground support) with a detailed description of the resulting CR.
- Requirements, standards, and training are in place for use by employees. The *Yucca Mountain Railway MW 1 – Track Standards* (SIT.20050711.0047), Revision 0, details the requirements and standards for use by all employees performing inspection, maintenance, and/or renewal to the YMP railway system as well as specifying the minimum acceptable safe limits for railway operations.
- A Preventative and Predictive Maintenance Program is being implemented.

The audit team also provides the following observations:

- A crosswalk is recommended to address issues, findings, concerns, and observations for past evaluations of the YMP railway system.
- As-built drawings have not been prepared from available data.
- There is no formality or process in place to ensure or describe that safety mitigations are being implemented and that they are effective. This observation was submitted to the CAP as a level D CR 8638.

2.2 Electrical System

Independent electrical safety reviews of the YMP were performed in July and September 2004 to evaluate facility safe-work practices relative to the Project's electrical systems. This included a review of technical and AP procedures, a review of equipment history, field observation of maintenance practices and a field walk-down of electrical systems. The reports provided a summary of strengths and areas of improvement regarding physical condition of electrical

systems, effectiveness of maintenance practices, use of safe-work practices, compliance issues, configuration management, and use of performance measures and trending data. Review of the electrical system per discussion with Operations and the work lead indicated the following:

- The design basis is being reconstituted.
- BSC has evaluated existing conditions resulting from previous independent reviews and recent self-assessments conducted by BSC and its Repository Operations.
- The CAP is used to track and resolve issues, findings, concerns, and observations from these independent analyses and self-assessments conducted on the electrical system.
- Safety mitigations are managed by Operations as previously discussed.
- Ongoing system inspections (walk downs) are being performed.
- As-built condition is documented for approximately 95% in Field Sketches (FSK) down to the electrical panel level.
- The work order process updates FSKs for changes as required by OP-PRO-9101, Revision 0, *Work Control Process*.

The audit team also provides the following observation:

- Similar to the rail observation noted above, there is no formality to ensure that safety mitigations are being implemented or are effective. (Level D recommendation CR 8638)

2.3 Fire Protection System

BSC scope of work is to provide a fire detection and alarm system for the underground portion of the YMP. BSC generated the Fire Detection Specification and the contract was awarded to Fire Protection Services Corporation (Mountain Alarm Corporation) who furnished design drawings (PE stamped) and components. BSC is performing the installation of the system and the functional test of each of the 11 segments. There have been a number of self-assessments and analyses on the BSC Fire Protection Program.

A review of the fire protection system per discussion with the Operations representative and the Fire Protection Engineer indicated the following:

- The fire protection system (FDS) has stamped PE drawings and is under configuration control in accordance with the National Fire Protection Association (NFPA) 72 regulations and the Nevada State Fire Marshal Regulations.
- The fire detection system (FDS) has been installed in 4 of 11 zones. Two additional zones are in the process of being completed during the time of this audit.

- The Nevada Test Site Fire Marshal witnesses all inspections conducted per the Nevada State Code NFPA-72 by Craft with a F card.

- According to BSC Environmental, Safety and Health Self-Assessment Report, MSA-ES-2006, BSC Fire Protection Program Assessment, the self-assessment indicates the BSC current capability to fight a subsurface fire (beyond the incipient stage) does not exist due to the YMP Fire Fighting Policy, "Substandard Water Distribution System," inadequate pre-incident plan, lack of proper training, and required equipment (CR 8186). The water system at the ESF is non-compliant and unreliable (CR 8188). Therefore, DOE 440.1A and DOE 420.1A are not being met.

- The CAP is used to track and resolve issues, findings, concerns, and observations from self-assessments and analyses conducted on the fire protection program. BSC implements a Plan Action Item List for fire protection issues and resolutions that identifies the deficiencies temporary compensatory measures effectiveness and path forward.

The audit team also provides the following observations:

- There is no formality to ensure that temporary compensatory measures are being implemented (Level D recommendation CR 8638).

- To ensure appropriate fire protection design bases, the applicability of Occupational Safety and Health Act versus Federal Mine Safety and Health Act relative to YMP needs to be finalized.

- The BSC Fire Protection Engineer will require additional assistance in order to control all fire protection activities and interpret the fire protection requirements in the newly issued regulation, 10 CFR 851, Worker Safety and Health Program.

3.0 FOLLOW-UP ON PREVIOUSLY IDENTIFIED CONDITION REPORTS

The audit team evaluated the following CRs that were documented as a result of the last site audit, OCRWMC-OQA-05-14:

Level B CR 6217 - Noncompliance with LP-OM-072-BSC
Level B CR 6214 - Work Orders lacked adequate electrical safety screening (Open)
Level B CR 6215 - Incomplete transition of Augmented Quality Assurance Program (Open)
Level C CR 6213 - Work Orders lacked QA classification or had changes with incorrect QA classification
Level C CR 6219 - Design Engineering refers to all 10CFR73 activities as being QARD rather than AQAP applicable
Level C CR 6211 - Monthly Drainage Observation Reports not developed
Level C CR 6212 - No notifications of out of calibration conditions to TCO Data Management

The audit team did not identify repetitive conditions for each of the closed CRs. The actions noted in the CRs are considered to have been effective.

4.0 PROGRAM IMPLEMENTATION AND EFFECTIVENESS

With the exception of the specific conditions noted above, the audit team concluded that implementation of the QARD for quality-related activities were satisfactory. With respect to implementation of the AQAP, the team concluded that with the completion of the grading process that specifies the procedures applicable to the AQAP activities, the implementation of the AQAP is satisfactory.

6.0 ATTACHMENTS

Attachment A – Personnel Contacted
Attachment B – Summary of Audit Results
Attachment C – Chronology of Events

Attachment A - Personnel Contacted

NAME	ORGANIZATION	PRE-AUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
Mike Arellano	BSC/ESF Site Superintendent		X	
Greg Bates	BSC/ESF Site Lear Surveyor		X	
Angela Bass	BSC/RMDC Site Records Management		X	X
Dennis Brown	BSC/ESF Site Project Field Engineering	X	X	
Mike Carmichael	BSC/QA Manager	X		
Ezra Carter	BSC/ES&H, Emergency Services		X	
Jim Casteel	BSC/ESF Site Superintendent		X	
Brenda Cavallo	BSC/SMF, Administration		X	
Jessie Cisneros	BSC/ESF Operations/Outage Planning	X		
Dan Cozzolino	BSC/ESF Site Project Field Engineering	X	X	X
Bob Cullison	BSC/ES&H Safety and Health	X	X	
Curtiss Davis	BSC/ESF Site Project Field Engineering	X	X	X
Dennis Dugas	BSC/RPM Repository	X		
Gregory Eitrem	BSC/ESF Site Superintendent		X	
Edward Fitch	BSC/ESF Site Project Field Engineering		X	
Edward Gilbert	BSC/ESF Site Project Field Engineering		X	
Bob Habbe	BSC/QA Quality Verification		X	
Julie Hitz	BSC/ES&H Safety and Health		X	
Robert Hopkins	BSC/ESF, Electrical System		X	
Edward Idzior	BSC/ESF Operations/Outage Planning		X	
Robert Jamison	BSC/ESF Property & Materials Operation		X	
John Kelly	BSC/SNL TCO Scientific Investigation		X	
Mike Kennedy	BSC/ESF Site Manager	X		X
Kevin Krank	BSC/QA Site Suspect/Counterfeit Parts		X	X
Morgan Lavelle	BSC/LANL TCO Data Collection Systems		X	
Chris Lewis	BSC/TCO SMF		X	
Gary MacDonald	BSC/ESF Site Project Field Engineering		X	
Stephanie MacLean	BSC/ES&H Safety and Health		X	
Deidre Maestas	BSC/L&NS, Performance Assessment Operations		X	
Curtis McAvoy	BSC/ESF Site Project Field Engineering		X	
Edward Meigs	BSC/ESF Operations Fire Protection		X	
Tim Moran	BSC/ES&H Environmental Science		X	
David Osborne	BSC/QA Site Quality	X		
Mike Pitterie	BSC/TCO SMF		X	
James Pollard	BSC/ES&H Site			X
Debbie Quero	BSC/ESF Operations Outage Planning		X	
Richard Scallon	BSC/ESF Property & Materials Operations			
Ron Schutt	BSC/ESF Construction	X		
Loretta Simon	BSC/ESF Operations/Outage Planning	X		
Rick Strohl	BSC/ESF Operations/Outage Planning			X
Ronald Vigue	BSC/ESF	X		
Rick Weeks	BSC/QA Site Quality	X	X	X
Pam West-Thompson	BSC/OA Assessment & Strategic Programs	X		
Judy Wetzel	BSC/RMDC Records Control	X	X	
Willie Williams	BSC/QA Site Quality Control Engineering	X		
E. von Tiesenhausen	Clark County	X		

Attachment A - Personnel Contacted (continued)

NAME	ORGANIZATION	PRE-AUDIT MEETING	CONTACTED DURING AUDIT	POST-AUDIT MEETING
John Arthur, III	DOE/Yucca Mountain Site Operations Office	X		
Beth Bennington	DOE/OQA Quality Systems	X		X
Kerry Grooms	DOE/OQA Quality Assessments Team Lead	X		
Dick Spence	DOE/ESH&S	X		X
Brian Dozier	LANL/TCO Field Test Manager	X	X	X
Bob Hasson	NQS/Program Manager			X

Legend:

ESF	Exploratory Studies Facility
ESH&S	Environment, Safety, Health & Security
ES&H	Environmental Safety and Health
LANL	Los Alamos National Laboratory
L&NS	Licensing & Nuclear Safety
NQS	Navarro Quality Services
OA	Organizational Assurance
OQA	Office of Quality Assurance
SMF	Sample Management Facility
QA	Quality Assurance
SMF	Sample Management Facility
SNL	Sandia National Laboratories
TCO	Test Coordination Office
RMDC	Record Management & Document Control
RPM	Repository Project Management

Attachment B - Summary of Audit Results

Area/Product	Implementing Documents	Condition Reports	Noteworthy Practices	Program Adequacy	Implementation	Overall Effectiveness
Organization	Site organization chart dated 12/12/05			Satisfactory	Satisfactory	Effective
Quality Assurance Program	QA-PRO-1014, Rev. 0			Satisfactory	Satisfactory	
	LP-2.9Q, Rev. 2, ICN 0			Satisfactory	Satisfactory	
	OP-PRO-9101, Rev. 0			Satisfactory	Satisfactory	
	LP-OM-072-BSC, Rev.2, ICN 0	Level C CR 8635		Satisfactory	Satisfactory	
Control of Purchased Items and Services	QA-PRO-1071, Rev. 1	Level C CR 8632		Satisfactory	Satisfactory	Effective
Implementing Documents	PA-PRO-0308, Rev. 0			Satisfactory	Satisfactory	Effective
	LP-OM-041Q-BSC, Rev. 0, ICN 5	Level C CR 8633		Satisfactory	Satisfactory	
Document Control	LP-6.3Q-BSC			Satisfactory	Satisfactory	Effective
Control of Purchased Items and Services	QA-PRO-1071, Rev. 1	Level C CR 8632		Satisfactory	Satisfactory	Effective
Identification and Control of Items	PA-PRO-0203, Rev. 0	Level C CR 8637		Satisfactory	Satisfactory	Effective
Control of Special Processes	QA-PRO-1076, Rev. 0			Satisfactory	Satisfactory	Effective
Inspection	QA-PRO-1073, Rev. 1			Satisfactory	Satisfactory	
	QA-PRO-1074, Rev 0			Satisfactory	Satisfactory	
	QA-PRO-1075, Rev 2			Satisfactory	Satisfactory	
Control of Measuring and Test Equipment	LP-OM-039Q-BSC, Rev 0, ICN 1			Satisfactory	Satisfactory	Effective
Handling, Shipping, and Storage	LP-CON-006Q-BSC, Rev. 4, ICN 4			Satisfactory	Satisfactory	Effective
Inspection, Test, and Operating Status	LP-CON-007Q-BSC, Rev 1, ICN 5			Satisfactory	Satisfactory	Effective
Nonconformance	AP-16.1Q, Rev. 8, ICN 6	Level C CR 8636		Satisfactory	Satisfactory	Effective
Quality Assurance Records	AP-17.1Q, Rev. 4, ICN 2			Satisfactory	Satisfactory	Effective
	LP-17.1Q, Rev. 2			Satisfactory	Satisfactory	
Sample Control	AP-SII.1Q, Rev. 1			Satisfactory	Satisfactory	Effective
	PA-PRO-0809, Rev. 0			Satisfactory	Satisfactory	
Scientific Investigation	EV-PRO-5004, Rev. 0			Satisfactory	Satisfactory	Effective
	PA-PRO-0308, Rev. 0			Satisfactory	Satisfactory	
Field Surveying	LP-OM-037-BSC, Rev. 0, ICN 3			Satisfactory	Satisfactory	Effective
CRs reviewed	CR 6217, 6213, 6219, 6211, 6212				Satisfactory	Effective

Attachment C – Chronology of Events

KEY SYSTEMS ACTIVITIES

9/03-12/03:	Evaluation of Electrical System at Site
12/03:	Planning of Site Systems evaluation with Management (Start with Electrical, then follow on with remaining systems. Basis is "Life, Safety, and Code Compliance")
1/04 -11/04:	Walkdown of As-Built Electrical; Preparation of Site Electrical Single Line
2/04:	Start "ETAP" reconstitution
6/04:	BSC D&E disbanded; Specifications and drawings cancelled
7/04:	Electrical Systems Evaluation/UG/PMG
9/04:	Electrical Systems Evaluation/SURF/PMG
11/04:	Site Systems Evaluation/Bechtel Corporation (Rail, Ventilation, Electrical, and Communication)
4/05 - 7/05:	Rail Maintenance Standards & Training
11/05:	Sperry/Ultrasonic Testing (UT) of Rail System

SELF-ASSESSMENTS & AUDITS

1/05:	Site Maintenance Program, BQA-SI-05-055 Surveillance (BSC QA)
2/05:	Work Request/Work Order Process Self-Assessment, OQA-SOP-2005-005 (BSC)
7/05:	QARD/AQAP Audit OCRWMC-OQA-05-14 (DOE OQA)
3/05:	Electrical System Work & Issues, OSA-SOP-2005-007 Self-Assessment (BSC)
7/05:	Electrical System Work & Issues, OSA-SOP-2005-012, Self-Assessment (Repository Operations)
1/06:	Facility Operations, BQA-BSC-06-03 (BSC QA)
6/06:	EPPS, BSC Site